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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,506	04/15/2004	Daisuke Tsutsumi	26B-034	6563
23400 7590 01/29/2007 POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			EXAMINER FIGUEROA, JOHN J	
			ART UNIT 1712	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/29/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/824,506

Applicant(s)

TSUTSUMI ET AL.

Examiner

John J. Figueroa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 4 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The 35 U.S.C. 102(b) rejection of claims 1, 2, 4-9 and 11-13 as being anticipated by PCT Application Publication Number WO 2001/27204 A1 to Matsuoka et al., hereinafter 'Matsouka' (item 3 on page 2 of the Office Action of August 9, 2006, hereinafter 'OA') has been withdrawn in view of Applicant's amendment to the claims in the response to OA filed November 2, 2006, hereinafter 'Response'.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5-9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number (USPN) 5,625,002 to Kadoi et al., hereinafter 'Kadoi', as further evidenced by USPN 3,919,177 to Campbell, hereinafter 'Campbell', in view of Derwent Abstract of Japanese Patent Number JP 2000160011 A to Nishimura et al., hereinafter 'Nishimura'.

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New claims 14 and 15 limit olefin (b) of the resin product, and fuel tank comprising thereof, to be 15% to 40% by wt. of the (b-1) component and 60% to 85% by wt. of the (b-2) component.

Kadoi discloses a polyphenylene sulfide resin composition, having excellent flexibility, impact and melt flow characteristics, comprising (A) a polyphenylene sulfide (PPS), (B) an epoxy group-containing olefinic polymer, and (C) an elastomer selected from, *inter alia*, ethylene/propylene copolymers; ethylene/butene copolymers; copolymers of ethylene with a monomer selected from acrylic acid, methacrylic acid and alkyl esters; and salts thereof, and a shaped article made from said polyphenylene sulfide composition. (Abstract; col. 1, lines 16-18; col. 2, lines 4-23) The mixing ratio among the PPS (A), the epoxy group-containing olefinic copolymer (B), and the elastomer (C) can be within a range such that the (A)/[(B)+(C)] weight ratio is from 55/45 to 99/1, and the (B)/(C) weight ratio is from 95/5 to 5/95. (Col. 6, lines 62-67)

Kadoi discloses that although any PPS prepared according to known processes can be used, the PPS generally includes a low molecular weight PPS (as prepared by the process in USPN 3,354,129 to Edmonds) and/or a substantially linear polymer PPS having a relatively high molecular weight (which can be prepared in accordance with the process taught in Campbell) due to the excellent toughness of the PPS. (Col. 2, 39-55; See also, Campbell, col. 9, lines 29-45 disclosing a process for preparing a PPS of relatively high molecular weight having a MFR from about 50 to 700, ASTM D 1238-70, 600°F, 5kg/10 min.)

The PPS used in Kadoi can be subjected to an (a) an acid treatment, (b) a hot water treatment and/or (c) an organic solvent washing treatment, wherein the organic solvent can be chloroform. (Col. 3, lines 29-32; col. 4, lines 5-42) The PPS/PPS resin composition can contain usual additives such as an antioxidant, a heat stabilizer, a lubricant, a crystal nucleating agent, an ultraviolet absorber, a colorant and a minor amount of other polymer, such as a cross-linking-preventing agent as, e.g., dialkyltin dicarboxylate or aminotriazole. (Col. 4, line 60 to col. 5, line 3)

Kadoi discloses that the epoxy group-containing olefinic polymer (B) is an olefinic polymer having an epoxy group in the side chain or main chain, wherein the epoxy group-containing olefinic polymer can be an olefinic polymer having a glycidyl group, such as a glycidyl ester; a glycidyl ether or a glycidyl amine in the side chain; a copolymer of an α -olefin with a glycidyl ester of an α,β -unsaturated acid; glycidyl acrylate; glycidyl methacrylate; or glycidyl ethacrylate, and wherein the content of the epoxy group in the epoxy group-containing olefinic polymer (B) can be 0.1 to 30% by weight. (Col. 5, lines 4-33) Another olefinic monomer, such as methyl acrylate, methyl methacrylate, acrylonitrile, styrene, vinyl acetate or vinyl ether can be copolymerized with the epoxy group-containing olefinic polymer (B). (Col. 5, lines 33-39)

In addition, the elastomer (C) of PPS resin composition in Kadoi can be an ethylene/propylene copolymer; ethylene/butene copolymer; ethylene/propylene/diene copolymer; a copolymer of ethylene with acrylic acid, methacrylic acid or an alkyl ester; or a salt thereof. (Col. 5, lines 56-67) The ethylene/propylene copolymer is a copolymer of ethylene and propylene having a melt flow index of 0.1 to 50 g/10 min as determined

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according to JIS K-7210, wherein the ethylene content is 30 to 95% by weight. (Col. 6, lines 1-5) The ethylene/butene copolymer is a copolymer of ethylene and butene-1 having a melt index of 0.5 to 50 g/10 min, wherein the ethylene content is 30 to 95% by wt. (Col. 6, lines 6-10)

Moreover, Kadoi discloses that the PPS resin composition can be pelletized by melt-kneading and shaped into various articles having excellent impact characteristics and flexibility by various molding methods. It can be extrusion-molded into a tubular article, or other shaped article, having a high heat resistance, high chemical resistance, high gas-barrier property and excellent flexibility and impact resistance that is preferably useful in the automobile field, such as in a fuel line tube (part of a fuel tank) or as a brake tube. (Col. 7, lines 44-59)

Although Kadoi does disclose that the PPS resin can be prepared by any known method, thus not *requiring* it to be crosslinked by thermal oxidation (col. 7, lines 31-44), Kadoi does disclose in the examples, a process for forming samples of the PPS resin composition (col. 8, line 44 to col. 9, line 10); and a specific sample of a PPS resin composition formed from 70% by wt. of PPS, 20% of ethylene/butene copolymer and 10% of ethylene/glycidyl methacrylate. (Example 14 in Table 3 on col. 15-16; wherein the epoxy olefin to ethylene/ α -olefin copolymer is 1:2, that is, the total olefin component comprises 33% epoxy olefin and 66% ethylene/ α -olefin copolymer.) Kadoi does not expressly disclose the MFR for this PPS resin composition. However, because the resultant PPS resin composition disclosed in Kadoi (e.g. Example 14) and that

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encompassed by the instant claims are the same, they must inherently possess the same physical properties, such as MFR.

Regarding forming the PPS resin by a "flushing method", this is a product by process limitation that does not patentably distinguish a product claim from the prior art. When the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process." MPEP §2113. See *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) and *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985).

Finally, the claims recite the PPS component of the PPS resin composition further containing "an amount of extracts by chloroform of 2.2% by weight to 4.5% by weight." Apparently, the claims are reciting that the PPS component contain a specific amount of impurities obtained from the reaction product of the precursor monomers used to produce said PPS component. Kadoi does not expressly disclose "the amount of extracts by chloroform" of the PPS component of the PPS resin composition or the amount of impurities in the PPS component of the resin composition (although Kadoi does disclose treating/purifying the PPS component with chloroform as discussed above).

However, Nishimura teaches that PPS resin compositions having a Sozhlet extracts by chloroform (same method as instant specification, page 13, lines 10-14) of less than 3 wt.%, provide products that have less frequency of burrs (rough edges) resulting from the shaping/molding of the PPS resin composition. Therefore, it would have been obvious to one skilled in the art to purify the PPS component of Kadoi's PPS

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resin composition (until having less than 3 wt.% extracts by chloroform) to provide a resultant resin product/fuel tank having a more smoother, uniform, and thus, more commercially, marketable resin surface as taught by Nishimura.

Moreover, it is established case law that the mere purity of a compound does not, by itself, render a product/substance unobvious. *Ex parte Gray*, 10 U.S.P.Q. 2d 1922, 1927 (Bd. Pat. App. & Int. 1989); *In re White*, 374 F.2d 1010, 1013-14, 193 U.S.P.Q. 174, 177 (C.C.P.A. 1967); *In re Bergstrom*, 427 F.2d 1394, 1402, 166 U.S.P.Q. 256, 262 (C.C.P.A. 1970).

Thus, the claims are unpatentable over Kadoi.

Allowable Subject Matter

4. Claims 4 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest a resin molded product of a polyphenylene sulfide (PPS) resin composition, having a melt flow rate of 15 g/10 min to 50 g/10 min, comprising: (a) 60% by weight to 95% by weight of (a) PPS component and (b) 5% by weight to 40% by weight of an olefin resin; wherein said (a) PPS component comprises: (a-1) a PPS resin, not crosslinked by thermal oxidation, having a melt flow rate of 90 g/10 min to 350 g/10 min having an amount of extracts by chloroform of 2.2% by weight to 4.5% by weight; wherein said (b) olefin resin comprises:

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(b-1) an epoxidized olefin copolymer and (b-2) an ethylene- α -olefin copolymer; and wherein said (a) PPS component comprises 100 parts by wt. of said (a-1) resin and 5 to 80 parts by wt. of (a-2) PPS resin having a melt flow rate of 50 g/10 min to 800 g/10 min and an amount of extracts by chloroform of not higher than 1% by wt.

Response to Arguments

The 35 U.S.C. 102 Rejection over Matsuoka (item 2 of OA)

6. Applicant's arguments in Response regarding the 35 U.S.C. 102 rejection of as anticipated by Matsuoka have been considered but deemed moot in view of the new grounds of rejection. The rejection over Matsuoka has been withdrawn due to Applicant's amendment to independent claim 1 requiring the recited (b) olefin resin to comprise a *mixture* of the (b-1) olefin copolymer and the (b-2) ethylene- α -olefin copolymer, which is patentably distinct from the resultant olefin polymer *formed* from two copolymers that is disclosed in Matsuoka.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571) 272-8916. The examiner can normally be reached on Mon-Thurs & alt. Fri 8:00-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

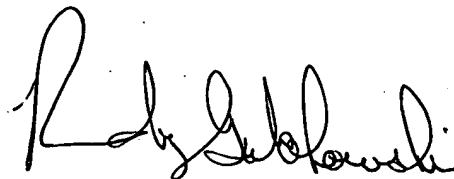
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A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with the first name "Randy" and last name "Gulakowski" clearly distinguishable.

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700